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ABSTRACT

Two questions are addressed: (1) What are the motivational characteristics of a child who is most likely to achieve in school at an optimal level? and (2) What kind of educational environment fosters these characteristics? Evidence suggesting that external rewards and punishment can have negative long-term effects on achievement motivation is reviewed. A discussion is given of theoretical and empirical work demonstrating that it is not reinforcement per se that influences children's behavior, but beliefs about one's competencies, perceptions of the cause of achievement outcomes, and values regarding achievement-related rewards that determine behavior. For maintaining high motivation in children, the following strategies are recommended: (1) evaluating on a mastery rather than a normative standard; (2) minimizing salient public evidence of individual childrens' performance; (3) considering errors as a normal aspect of mastering new skills; and (4) providing opportunities for all children to demonstrate competence in activities valued by the teacher. Encouraging students to trust their own evaluations and to set reasonable goals and providing greater autonomy in learning situations are suggested to help them develop independent, self-directed learning strategies. (JD)

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Motivating Students to Learn: A Lifelong Perspective

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SUMMARY

Learning is an active process requiring conscious and deliberate effort. Motivation to learn is therefore as necessary for learning to occur as is aptitude. This paper takes the position that it is important for children to exert maximum effort on academic tasks in the classroom and to be independent, self-directed learners. Furthermore, strategies used to motivate children in school must not undermine their functioning in post-secondary educational programs or their desire to engage in learning activities outside of the classroom. Within the context of these broad goals the paper addresses two questions: 1) What are the motivational characteristics of a child who is most likely to achieve in school at his or her optimal level; and 2) What kind of educational environment fosters these motivational characteristics?

The implications of two changes in traditional assumptions based on learning theory are discussed. First, evidence suggesting that external rewards and punishments can have negative long-term effects on achievement motivation is reviewed. Second, theoretical and empirical work demonstrating that it is not reinforcement per se that influences children's behavior in achievement settings, but beliefs about one's competencies, perceptions of the cause of achievement outcomes and values regarding achievement-related rewards that determine behavior.

It is proposed that external reinforcement is often unnecessary because children are intrinsically motivated to engage in activities that result in the development of new competencies. Intrinsically motivated achievement behavior is considered more desirable than externally motivated achievement behavior primarily because external reinforcements are not always available, especially in higher education institutions and outside of school. Moreover, over-reliance on extrinsic reinforcements can undermine children's intrinsic motivation to engage in learning activities.

Several strategies are recommended for maintaining achievement-related cognitions that result in high effort and continued interest in learning: 1) evaluating on a mastery rather than a normative standard; 2) minimizing salient public evidence of individual children's performance; 3) considering errors as a normal aspect of mastering new skills; and 4) providing opportunities for all children to demonstrate competence in an activity that is publically valued by the teacher. De-emphasizing external evaluation, selecting tasks that challenge each student's current skill level and providing opportunities for student choice in educational environments are recommended as strategies to maintain intrinsic motivation. Encouraging students to trust their own evaluations and to set reasonable goals and providing greater automonmy in learning situations are suggested to help students develop independent, self-directed learning strategies.

The paper concludes that radical changes in educational environments will be necessary to achieve the motivational goals set forth in the paper. The recommendations date back to John Dewey and some were implemented in experimental schools in the 1960's and 70's. But now there

exists strong theoretical and empirical evidence to support the implementation of these recommendations on a broad scale. While it would be preferable to provide from the very beginning of a student's school experience a learning environment that is conducive to self confidence, intrinsic motivation and independent, self-directed learning, it is claimed that the introduction of such a learning environment, even in the high school grades, will further these goals.

Motivating Students to Learn: A Lifelong Perspective

Learning is an active process requiring conscious and deliberate effort. Motivation to learn is therefore as necessary for learning to occur as is aptitude. The motivational problems of low-achieving children have received the most attention in the achievement motivation literature, but even gifted children's enthusiasm for learning can be dampened, and, consequently, they too risk achieving below their potential (Marland, 1971; Whitmore, 1980). Educators must provide a learning context that maintains students' motivation to engage in learning activities if all students are to benefit maximally from the educational curriculum.

This task is complicated by other important goals related to motivation. To be sure, we want children to exert maximum effort on academic tasks in the classroom. But the strategies used to maintain children's motivation in school must not hinder their functioning in post secondary educational environments which often require independent learning strategies and a high level of self motivation. We also hope that children will engage in learning activities like reading or developing new skills outside of school. Indeed, we want individuals to value learning and to be motivated to seek learning opportunities throughout their adult lives.

Within the context of these broad goals, this paper addresses two questions: 1) What are the motivational characteristics of a child who is most likely to achieve at his or her optimal level? 2) What kind of educational environment fosters these motivational characteristics?

Different-aged children pose different motivational problems and, consequently, require different educational strategies. Developmental factors relevant to these two questions will therefore be discussed when relevant.

From Reinforcement to Cognition

Until about the last decade a reinforcement model of motivation dominated the educational literature. In its simplist form, this model assumes that the frequency of a desired behavior increases if an individual is rewarded for the behavior and the frequency of undesired behavior decreases if the individual is punished for it. Thus, a child exerts effort on an academic assignment to obtain a reward (e.g. a high grade) and to avoid punishment (e.g., a low grade).

Even now, although educational psychology textbooks used in teacher training are beginning to describe the cognitive models that currently prevail in the theoretical and research literatures, they usually give more attention to behavioral theory. Ironically, the reinforcement principles of motivation that have undoubtedly had the most impact on educational practice are not grounded in an achievement-motivation model. Reinforcement theory was proposed to account for <u>all</u> behavior and achievement behaviors have never been given special theoretical attention. However, at a practical level a rather extensive educational "technology" has developed out of reinforcement theory. Elaborate token economies are employed to motivate children in many educational settings, especially in programs for learning handicapped or behaviorally disordered children. Other rewards and punishments such as verbal praise or criticism, giving or withdrawing privileges, and grades, are common in all types of educational settings.

The impact of reinforcement theory on American education is understandable for the simple reason that reinforcers are often effective in controlling achievement behavior. With or without special training, most teachers find that the promise of a reward or the threat of punishment can powerfully affect children's behavior in the classroom, at least in the short-term. When certain principles based on recent refinements in the application of the theory are followed, rewards can be effectively used to elicit adaptive achievement behaviors in children without long-term negative effects (Brophy, 1981). Although punishment is considered by most workers in this field to be less effective. Behavioral methods have been particularly successful with children who behave extremely maladaptively in school settings (Haring & Phillips, 1972).

The problem is that most teachers of nonhandicapped children have not had specialized, up-to-date training in behavioral techniques and they often use reinforcement inappropriately. Teachers also tend to over-rely on rewards and punishment to control achievement behavior. I will argue in this paper that the long-term costs of strict adherence to a reinforcement model of achievement motivation, especially when it is inappropriately applied, as it usually is, has important long-term costs to student motivation. Moreover, there are other motivational systems, to be discussed later, that can be activated in educational settings.

Problems with Reward and Punishment

Consider first the potential hazards of over-reliance on rewards. Traditional rewards used in most American classrooms are not universally effective. Grades, for example, are ineffective with children in early elementary school because they have not yet learned the cultural value placed on high grades. Furthermore, unless the value placed on grades

by teachers is reinforced by parents and peers, children of any age are unlikely to work for such a symbolic reward. Alternative rewards (e.g., candy, money) have on occasion been used in schools, but there are obvious problems with these controversial reinforcers. The problem of finding an effective reinforcer for achievement behaviors may be particularly serious for adolescents whose concerns are often directed toward popularity, athletics, or other nonacademic activities. Indeed, among some rebellious or alienated adolescents for whom success in school is explicitly devalued, high grades may be perceived as an embarrassment rather than as a reward!

A second problem with external reinforcement is that its effectiveness is often short lived. Rewards may be effective in eliciting "new" or "unestablished" behaviors, but if external reinforcement is not gradually withdrawn, the behavior will occur only under reward conditions. Thus, when a reward is withdrawn altogether, the desired behavior occurs less frequently or ceases altogether.

The limitations of rewards become increasingly important as children advance in grade in school. The curriculum in the early elementary school grades is generally broken down into small units with frequent opportunities for reinforcement. Most assignments are completed in less than half an hour and are reviewed by the teacher soon after. In the upper grades, assignments are generally larger, less frequent, and they span over a longer time period. Compare, for example, typical language arts assignments for elementary- and high-school students. The younger students may be given in one day as many as three short assignments for which they can receive reinforcement. High school students are more likely to be asked to write a theme based on assigned reading once every

week or two. Consequently, while young children can be reinforced for every subcomponent of the academic task, older students must go through many steps without any reinforcement (i.e., they must read the assigned literature, think about it, make an outline, write, and perhaps rewrite the theme). The older student is not rewarded for the several tasks that were required to complete the assignment.

For students who enter college, many rewards (e.g., obtaining a degree, getting into graduate school, getting a good job) are far removed from the immediate situation requiring achievement behaviors. Even within a given course, a midterm and a final examination are often the only "products" of a semester of academic labor that the professor sees, and consequently, the only opportunities for students to be reinforced. The promise of such distant rewards will not be effective for many students who are accustomed to being reinforced for every academic effort.

Rewarding achievement behaviors in the classroom can also have negative implications for children's desire to pursue achievement-related activities such as reading outside of school. If these activities are done to obtain praise from the teacher or a good grade, the child may overlook the intrinsic value or pleasure that derives from learning activities.

Punishment can also have negative consequences for achievement behavior. Fear of punishment, such as public humiliation or low grades, can cause anxiety, which is well-known to seriously hinder learning if it is extreme (Hill & Sarason, 1966; Spielberger, 1966). Such fear can cause attentional problems or, if severe, it can block mental processing altogether.

Many children spend considerably more energy trying to avoid punishment than they do trying to understand material or learn new skills. Thus, for example, they avoid asking questions or volunteering answers for fear of revealing their ignorance. Or, they turn in completed assignments with answers that they know are incorrect rather than trying to figure out the correct answers because they have learned that punishment for not turning in an assignment on time is more severe than punishment for poor performance. Astute classroom observers have described these and other elaborate measures that some children take (e.g., Covington & Beery, 1976; Holt, 1964). Most of these failure-avoiding behaviors accomplish the student's immediate goal of avoiding punishment, but they are self-defeating in the long run.

These are some of the practical problems related to over-reliance on rewards and punishments in educational settings. Revisions in reinforcement theory itself suggest further reasons for reconsidering current educational practice based primarily on traditional reinforcement theory. These theoretical revisions, discussed below, have important implications for the use of reinforcements in the classroom.

The Discovery of Cognitions

Traditionally, reinforcement theory was rooted in a mechanistic view of behavior. Individuals' perceptions, beliefs, or other cognitions were not considered relevant. Behavior was explained entirely by the individual's reinforcement history (i.e., by their history of rewards and punishments). Thus, children's history of success (reward) and failure (punishment) in school was believed to be the most important determinant of achievement behavior. Children who had experienced a high proportion of failure were likely to give up more easily and exert

less effort in achievement settings than children who had a higher proportion of success experiences.

In recent decades, theorists have introduced various cognitions into traditional reinforcement models. Cognitive theorists claim that behavior is determined by students' beliefs, not simply by whether they have been rewarded or punished in the past. Rotter, (1966) for example, explains that it is not the reward itself that increases the frequency of behavior, but an individual's beliefs about what brought about the reward. If individuals do not perceive rewards as contingent on their own behavior they will not expect the behavior to be followed by a reward in the future. Consequently, the reward will not positively influence future behavior. For example, if a child knows that everyone in the class received an A on a particular assignment, he or she may believe that the teacher gives A's indiscriminantly, regardless of the quality of the product or the amount of effort exerted. The child may not try very hard on a similar assignment in the future because the reward (the A) is not believed to be contingent on his or her behavior.

Rotter refers to the individual's beliefs regarding personal control over the contingency of reinforcement as "locus of control." Briefly, "internal control" refers to an individuals belief that an event or outcome is contingent on his or her own behavior or on relatively permanent personal characteristics such as ability. The belief that an event is caused by factors beyond the individual's control (e.g., luck, task difficulty, biased teacher) has been labeled "external control."

Rotter argues that a generalized belief system, developed out of past experience in similar situations, influences an individual's behavior. Thus children who have repeatedly experienced failure regardless of the

amount of effort they have exerted may believe that success is not contingent on effort, even in situations in which effort would lead to success. A child's generalized belief, (i.e., success is not contingent on effort) may override information to the contrary in any specific situation. Early school experiences can therefore have long-term effects on motivation by influencing young children's developing belief systems.

Rotter's theoretical work has spawned an extensive empirical literature linking students' academic achievement with their locus of control (for reviews, see Lefcourt, 1976; Stipek & Weisz, 1981). Clearly, beliefs in the contingency of reinforcement influence achievement behavior. Children who believe that no matter how hard they try they will never get an acceptable grade are unlikely to exert much effort. Children who perceive the teacher as biased may likewise believe that grades are not contingent on the amount of effort they exert or the quality of the product and consequently they may also stop trying.

Rotter's distinction between the beliefs that rewards are contingent (internal) or not contingent (external) on the subject's characteristics or behavior has important educational implications, but practical classroom application has required certain refinements. Consider the different implications of perceiving ability versus effort as the cause of achievement outcomes. Both are internal on Rotter's dimension, but children who believe that their low grades are caused by low ability should behave differently in achievement settings from children who believe that their low grades result from lack of effort. The latter children are much more likely to try to succeed in future achievement situations. Children who attribute poor performance to low ability are not likely to exert effort because low ability is generally believed to limit the effectiveness of effort.

Recently, attribution theorists have refined and elaborated upon Rotter's concept of locus of control. Weiner (1979) claims that effort and ability attributions, both internal, and treated equivalently by Rotter, have different behavioral implications because effort is under the control of the individual and ability is not. Ability is also generally perceived as a relatively stable cause, whereas effort can vary from situation to situation. Thus, Weiner distinguishes between two kinds of internal causes of achievement outcomes, controllable and unstable causes like effort and uncontrollable stable causes like ability. The control and stability dimensions that Weiner added to Rotter's original internal-external dimension allow much more refined behavioral predictions from beliefs about the cause of reinforcements.

The other major difference between Rotter's and Weiner's analyses of achievement-related cognitions is that Rotter emphasizes generalized beliefs that develop with experience in achievement settings and are assumed to hold regardless of situational factors. Weiner, while admitting that relatively stable individual differences in perceptions of the cause of achievement outcomes may occur, emphasizes situational factors in subject's attributional judgments. He claims that individuals make judgments about the causes of achievement outcomes on the basis of information in the current achievement situation. The difficulty of the task, others' performance, and the subject's analysis of his or her own competence at that particular task all bear on this judgment. Past experience in similar achievement contexts is relevant, but it is only one of many factors that are considered. Weiner's view is somewhat more optimistic since it suggests that we should be able to change children's causal attributions, whatever their previous experiences in achievement contexts, by manipulating current environmental variables.

Beliefs about the causes of success and failure as mediators of achievement behavior have been studied by Dweck and her colleagues (Dweck, 1976; Dweck & Bush, 1976; Dweck, Davidson, Nelson & Enna, 1978; Dweck & Gilliard, 1975; Dweck & Goetz, 1978; Dweck & Reppucci, 1973; Diener & Dweck, 1978). They note that some children with a history of poor performance in school persist and actively pursue alternative solutions to a task when they encounter failure, while the performance of others undergoes marked deterioration in persistence or quality, evidencing what they refer to as "learned helplessness". Why do children respond differently to the same failure experience? Consistent with Weiner's attributional analysis of achievement behavior, Dweck claims that learned helplessness in achievement situations occurs when students perceive failure to be independent of their behavior. This perception of failure as insurmountable is associated with attributions of failure to stable and uncontrollable factors, such as lack of ability. This attribution results in seriously impaired performance. In contrast, positive achievement behavior tends to be associated with attributions of failure to variable factors which are in the child's control, particularly to lack of effort.

Dweck and others have developed educational programs designed specifically to alter children's causal attributions for failure from ability to effort (Andrews & Debus, 1978; Chapin & Dyck, 1976; Dweck, 1975, Schunk, 1982). Essentially, these programs attempt to shift children's analysis of task situations from, "I can't do this no matter how hard I try, I'm just not smart enough to learn it," to "I can do it if I try because I know I'm smart enough."

The results of Dweck's (1975) own intervention study provide compelling evidence for the importance of beliefs in achievement-related behavior. She selected a sample of children who exhibited helpless behavior in response to failure and randomly assigned them to two treatment groups; half of the children received only success experiences, the other half received attribution retraining. In the attribution retraining group failure experiences were explictly attributed by the experimenter to insufficient effort. At the end of 25 daily sessions, both groups were again tested for the effects of failure on their performance. While no improvement was shown by the success-only training group, all of the children in the attribution-retraining group showed greater persistence following failure than they had before the training program.

So far attribution training programs have been applied exclusively to low-achieving children. However, children performing at any level of achievement can develop learned helplessness. For some children a B+ means unmitigated failure. If these children believe that they lack the aptitude to achieve an A, they may become as discouraged as other children who do not make passing grades. Fear of a B on a test is as debilitating for some children as is fear of an F for others. Beliefs about the cause of achievement outcome are therefore just as relevant to the optimal achievement of high- as of low-ability children.

Even children identified as gifted are not immune from feelings of helplessness and the accompanying self-defeating achievement behaviors. Indeed, gifted children may be especially vulnerable because parents, usually proud of their child's special academic talents, often express exceptionally high expectations that the child feels incapable of fulfilling. Since performance below parents' expectations may be regarded by

the child as failure, he or she might give up trying altogether. Gifted children can also develop learned helplessness as a result of being placed in a special class. A child who is accustomed to being the highest achiever in a regular class does not always adjust easily to performing at a comparatively lower level among other gifted children. A lower standing in the gifted class can cause feelings of failure and a belief that no amount of effort will assure success (which they define as being "the best" in the class). Thus, whatever the child's achievement level, a belief that success cannot be achieved through effort will usually result in helpless behaviors in academic settings.

The most important determinant of children's interpretation of the cause of their successes and failures is their perception of their own competence, i.e., whether they believe that they possess the necessary ability to obtain some form of desired reinforcement. A child who believes that he or she lacks the basic ability will also believe that no amount of effort will bring about a positive outcome. Bandura (1977) refers to the self-perception of possessing the prerequisite ability for effort to be effective as "self-efficacy." He and his colleagues have demonstrated the importance of self-efficacy perceptions for adaptive behavior for clinical populations (especially phobics) as well as for individuals in learning situations (Bandura, 1982).

Confidence in one's ability to complete tasks bears on children's strategies and attention while performing tasks, in addition to the amount of effort they exert. Self confidence is, for example, related to a distinction Nicholls (1979, in press) makes between a "task-orientation" and an "ego-orientation." When task oriented, the individual's attention is focused on the process of completing a task; when ego-oriented,

attention is focused on the self and especially on external evaluations of the self.

The practical implications of this distinction are illustrated in a study by Peterson & Swing (1982). They observed children participating in a lesson on probability and later interviewed them individually. One of the students, Melissa, looked like she was paying good attention throughout the lesson. However, when subsequently asked what she was thinking about during the lesson, she commented that her first thought was: "...since I was just beginning, I was nervous, and I thought maybe I wouldn't know how to do things...I was thinking that Chris would proobly have the easiest time because she was in the top math group" (p. 486). After a later lesson segment, she responded: "Well, I was mostly thinking...I was making a fool of myself" (p. 486). Clearly, Melissa's attention was on herself and not on learning about probability. In contrast, task-oriented Jani responded to the same question by describing in some detail the strategies she used to solve the problems.

A final cognitive factor that has been given little consideration in traditional reinforcement theory concerns the degree to which children respond to different kinds of reinforcers found in achievement settings. Rotter notes that a child's expectation that a given behavior will bring a given reinforcer only increases the probability of the occurence of that behavior if the child values or desires the particular reinforcer. Students who do not value high grades, for example, may not study for a test, even though they believe that the high grade is contingent upon studying.

Values explain, to some degree, age differences in the effectiveness of reinforcers. When children first enter school, they are most responsive

to verbal praise (see Stipek in press a). The importance of teacher approval is probably related to the young child's lack of discrimination between a teacher's and a parent's role. Adult evaluation may also carry greater weight with younger children because they, unlike older children, apparently attribute full evaluative and moral authority to adults (Kohlberg, 1969). Their teacher's approval is apparently more important to them than are actual academic performance outcomes. As children learn that teacher approval is linked to their objective academic performance, gold stars, test scores, grades and other symbols of their performance become more highly valued. As pointed out earlier, when children enter adolescence, reinforcement related to academic performance may decline in value while reinforcement related to popularity or athletic prowess increases.

In summary, two major changes in traditional assumptions about how to motivate children to benefit optimally from schooling have occurred in recent decades. First, evidence has mounted suggesting if used continuously, rewards and punishment can actually have the opposite of the intended effect of increasing certain achievement-related behaviors--at least in the long run. Long-term negative effects of reliance on external reinforcements can occur because children become dependent on them and are consequently not motivated to engage in appropriate achievement-related activities when external reinforcement is absent. Second, it is not the reinforcement per se that influences children's behavior in achievement settings. Rather, cognitions, beliefs and values determine behavior. It is the child's <u>interpretation</u> of the situation, not the objective facts, that determine his or her response.

These modifications in traditional reinforcement theory suggest that rewards and punishments should be used sparingly in the classroom, although they should not (indeed, could not) be eliminated altogether. This is troublesome for most educators who have relied almost exclusively on external reinforcement to control children's achievement behavior. Fortunately, there are alternative strategies available for maintaining children's enthusiasm for academic tasks. We examine next proposals for an "intrinsic" motivational system (as opposed to one that is based on external rewards and punishments) that many motivational theorists currently believe is relevant to achievement behavior in the classroom. Later, we will consider principles for the effective use of external reinforcement, when it is necessary.

Intrinsic Motivation

In 1959 White published a now classic paper challenging the notion that external reinforcement is necessary for learning to occur. He presents evidence suggesting that a phylogenetic characteristic of the human species is an intrinsic "need" to feel competent, and that such behaviors as exploration, curiosity, and mastery attempts are best explained by this innate motivational force. Successful mastery of learning activities are naturally reinforcing because they result in feelings of competence. This motive is activated in any situation which provides opportunities for developing new competencies, and is therefore particularly relevant to formal educational settings.

White's defense of an intrinsic competence motive rests partly on its evolutionary adaptive value, since it impels the organism to deal more effectively with the environment. Piaget (1952) also makes an evolutionary argument for his similar claim that humans are naturally

inclined to practice newly developing competencies ("schemes" in his own terminology). Other theorists have extended in various directions White's and Piaget's basic notions regarding intrinsic competence motivation (Deci, 1975; Harter, 1978, 1981; Hunt 1963, 1965, 1971).

All of these theorists stress that external rewards are unnecessary for mastery or learning behavior to occur. Indeed, it is these motivation theorists who argue that external reinforcement can have a negative effect on behavior in achievement situations (see Bates, 1979; Condry, 1977, Deci, 1975, Notz, 1975). Supplying students with extrinsic incentives is claimed to be an artificial procedure that is not paralleled outside of the classroom and may ultimately undermine the inherent human motive to learn for the sake of learning.

This "undermining" effect of a reward is illustrated by an anecdote about an old man who was bothered by the noisy play of boys in the neighborhood (from Casady, 1975). The old man called the boys together and told them he was deaf and asked them to shout louder so he could enjoy their fun. In return he would pay each of them a quarter. The boys were delighted and on the first day the old man was provided with a considerable amount of noise for his money. On the second day, he told the boys that he could only afford to pay twenty cents. The pay rate dwindled day by day and eventually the boys became angry and told the old man that they certainly weren't going to make noise for nothing!

Emphasis in the classroom on external rewards is believed to have the same undermining effect on children's intrinsic desire to engage in learning tasks. An external reward offered for engaging in a task that a child might have been intrinsically motivated to do is believed to shift the child's attention from the original intrinsic motive to the

extrinsic reward. When the reward is removed, the child will no longer engage in the activity. Recent research indicates, for example, that if a child who likes to draw is offered a reward for drawing, he or she is less likely to seek opportunities to draw after the reward is withdrawn than if no reward had been offered (e.g., Boggiano & Ruble, 1979; Lepper & Greene, 1975; Lepper, Greene & Nisbett, 1973; McLoyd, 1979; Staw, 1976).

Intrinsically motivated achievement behavior is considered more desirable than externally motivated achievement behavior primarily because external reinforcements are not always available. A child who becomes dependent on rewards for engaging in achievement behaviors will fare poorly in educational environments which do not provide constant external reinforcements.

Individuals are also believed to experience greater pleasure while engaged in intrinsically, as compared to extrinsically, motivated tasks. DeCharms, Deci, and other achievement-motivation theorists claim that humans have a natural need to feel self-determining, to believe that they are engaging in activities by their own volition rather than to achieve some external reward or to avoid punishment (deCharms, 1976; deCharms & Muir, 1978, Deci, 1975). Since extrinsic reinforcement tends to focus individual's attention on the external reasons for engaging in a behavior rather than on personal volition, it reduces the individual's pleasure in engaging in a task.

Intrinsic motivation is not entirely an inherent characteristic of the task. Rather, the degree to which a task will appeal to an individual's intrinsic motivational drive is partly dependent on the context in which it is encountered. Providing extrinsic rewards and eliminating personal choice, for example, can render undesirable a task that, without these constraints, might have been considered fun.

Instrinsic motivation is just as valuable in work settings as in educational contexts. In any context individuals work harder and enjoy their work more if there is some choice involved and the work satisfies their need to develop competencies. Unfortunately, many jobs are unlikely to satisfy this need and will consequently be done only for some extrinsic reward, usually a wage. What we would hope is that individuals who find themselves in jobs that cannot satisfy their intrinsic need to develop competencies will seek opportunities for learning outside of work. Note, however, that emphasizing instrinsic motivation in school does not preclude working for extrinsic rewards later on. It is, in fact, much easier to shift individuals from an intrinsic to an extrinsic orientation than in the reverse direction.

Although many jobs provide little opportunity for individuals to develop new competencies or to feel some amount of self-determination in their work, most tasks in school can be presented in a way that would, to some degree, appeal to students' intrinsic motivational system. We turn now to a discussion of the kind of school environment that will maintain children's intrinsic motivation and contribute to the other positive motivational characteristics discussed above.

The Educational Context

The preceding theoretical discussion suggests three sets of motivational characteristics that contribute to optimal achievement and therefore should be fostered in school. First, positive achievement-related cognitions that result in adaptive learning behaviors and maximum effort need to be facilitated by the educational environment. Children should maintain a positive view of their competencies and the belief that they possess the necessary ability to master school-related material. As a

consequence, they should maintain high expectations to succeed at academic tasks and when they fail, they should not attribute the failure to lack of ability. Second, educational environments need to maintain children's intrinsic motivation to learn for the sake of learning so that they will continue to learn outside of school or in higher education institutions where extrinsic reinforcements are either unavailable or delayed. Tasks that cannot be presented in a way that appeals to students' intrinsic competence motive should at least be viewed by them as instrumental to meaningful personal goals. Third, the educational environment should encourage independent, self-directed learning strategies that will benefit children in and out of structured educational contexts.

We will consider first the effect of current educational practice on these dimensions related to children's motivation to learn. Then, suggestions will be made for creating educational environments that should better achieve our aims.

The Status Quo

It is ironic that before children enter school, they possess the kind of motivational characteristics that we desire to "create" in formal educational environments. They have positive perceptions of their competence and high expectations for success (see Stipek, in press b; Weisz & Stipek, in press). Because success and failure are generally attributed to effort, young children are less susceptible to learned helplessness than are older children (Rholes, Blackwell, Jordon, & Walters, 1980). Moreover, their task behavior is rarely debilitated by anxiety about the quality of products or about external approval. The learning activities that preschool-aged children spontaneously engage in are also primarily intrinsically motivating. For most young children

adult praise for their learning efforts is pleasing, but superfluous as far as motivation to engage in the activity is concerned. Finally, young children's learning is, for the most part, self directed; adults tend to serve more as resources than as instructors.

Schooling generally affects negatively these motivational characteristic with which children enter school. In school, children's achievement efforts are evaluated and compared to the efforts of their classmates. Because success is usually based on a comparative standard, some children necessarily experience failure. Partly as a consequence of the evaluative aspects of the formal educational setting, children's perceptions of their competence and their expectations for success decline on the average over the elementary school grades (see Stipek, in press a, in press b). From about the third or fourth grade on, an increasing number of children begin to believe that no amount of effort will lead to success and they begin to evidence learned helplessness. Anxiety about external evaluation also increases over the early school years as self-confidence declines and as children become socialized to value grades and other symbols of achievement.

Intrinsic motivation also wanes over the early elementary grades. Rewards (happy faces, stars, etc.) are made contingent on many activities that children previously found intrinsically satisfying. Consequently, children's attention turns away from the intrinsic motive (i.e., to feel competent) toward the more salient extrinsic motive (e.g., to get a star on a paper). Most formal educational environments seem to shift children as quickly as possible from an intrinsic motivational system to an extrinsic system which is more under the control of the teacher. Traditional schooling thus, seems to inhibit rather than capitalize on

children's intrinsic motivational system, and in other ways to diminish rather than enhance children's enthusiasm to learn. The apparent inability of the American educational system to maintain the interest in exploration and learning that seems to be intrinsic to most children when they enter school has been lamented by many educational philosophers (e.g., Bruner, 1966; Dewey, 1900; Goodman, 1962).

Finally, in school children are given much less choice in the learning activities they engage in than they were given in preschool and in kindergarten. Choice increases somewhat in secondary schools, but the level of independence in learning children enjoy before they enter school is never equalled in formal educational settings.

In many respects, these changes are necessary. Comparisons with other children are to some degree unavoidable when children are educated in groups, and these comparisons will inevitably result in lowered self-confidence for some children. Intrinsic motivation also cannot be relied upon for many school tasks. Some learning goals will surely seem irrelevant to children who do not understand the competencies required in a modern technological society. Teachers may find, for example, that children's intrinsic motivational system simply does not apply to learning the multiplication tables, yet he or she will probably believe that this competency is critical for adult functioning. The high level of independence that young children have in learning situations before school also cannot be sustained in school. Children are very unlikely to "choose" to engage in many of the academic tasks critical to the educational curriculum. Notwithstanding these limitations, however, most educational environments could be improved in ways that would positively affect children's motivation to learn. We turn now to recommendations for such improvements.

Maintaining Positive Achievement-Related Cognitions.

Evaluation based on class norms contributes significantly to ma children's negative achievement-related cognitions. In the individual competitive model that characterizes most classrooms rewards are allocated among individuals according to their relative performance. Competition among individuals of equal ability can be effective in optimizing effort because success is largely a function of effort. However, in more typical classrooms composed of competing individuals of unequal abilities, the outcome is determined only in part by ability; increments in effort by any competitor do not necessarily increase his or her probability of success. Accordingly, a competitive model could inhibit high effort in high-ability students because they can succeed without great effort when they are competing against students of lower ability. For the lower-ability students, competition can have devastating effects on their achievement behavior. In educational contexts in which success and failure are defined normatively, many children find themselves in a situation in which no amount of effort will ever lead to success. Inevitably these children lose their sense of efficacy, begin to expect relatively poor performance and when they do fail, they naturally attribute that failure to their poor ability. Since effort does not lead to success they begin to feel helpless and often give up trying altogether. This portrait applies to children who fare poorly when compared to peers in their present classroom, even if in other classrooms, they might be at the top of their class. For most children the standard by which they measure themselves is based on the children in their <u>own</u> classroom.

How might the inevitable failure and accompanying negative achievement related cognitions be avoided? Success must be viewed in terms of

exceeding one's own standard rather than surpassing the performance of others. Children should be graded according to how their performance compares to their previous performance or to standards set for them, rather then according to how their performance compares to others' performance. Learning can then be a cooperative rather than a competitive venture.

Both high- and low-ability students can benefit from this kind of a mastery as opposed to a competitive evaluation system. Low-ability students benefit from a mastery orientation because success is attainable and effort should always have some pay-off. High-ability students always have a higher standard of excellence to aspire to, since the objective is to surpass one's own previous level of performance. This is in contrast to a competitive reward system in which all high-ability students have to do to succeed is outperform their peers to succeed. For some children, outperforming classmates is accomplished with little effort and since they are not rewarded for achieving at still higher levels, they "take it easy." Many of the high-ability students I have interviewed have proudly informed me that they can finish their work in half the time it takes their classmates to complete assignments. The remaining time is often wasted. In a mastery-based program, these students would be encouraged to move on to the next level of an academic task.

This is not to say that every minute of the school day should be spent engaged in academic tasks. To the contrary, nontask time spent socializing with peers and in play activities can be valuable for children, especially in the early grades. However, in some classrooms, high-ability children spend <u>most</u> of their time waiting for their classmates to complete

tasks. A more individualized evaluation system can eliminate unnecessary and undesirable waiting time.

A mastery-based evaluation system is often associated with individualized instructional techniques, but it does not preclude either direct instruction or instruction to small groups. Teachers can provide direct instruction to a small group of students who have reached the same level of mastery and are ready to be exposed to new concepts. However, the groups should be loosely formed with the potential of changing composition every day.

Educational programs based on a mastery rather than a normative model have been tried, and in many cases these programs have resulted in a relatively high level of effort and achievement (see Block & Burns, 1976; Bloom, 1976; Good & Stipek in press; Slavin 1977, 1980). Yet mastery-based programs have not been implemented on a broad scale in the United States. Perhaps this is because a competitive classroom model is consistent with the larger economic and political context of American schools and a noncompetitive model runs counter to other socializing influences.

Children themselves have been known to sabotage teachers' efforts to emphasize personal rather than normative standards. In individualized programs in which students are supposed to be working at their own pace and focusing on developing competencies rather than outperforming classmates, some children introduce normative evaluation by informally creating a "race to the end of the curriculum." While the teacher reinforces each child for his or her personal gains, children sometimes focus their attention on their relative positions in the steps toward finishing the entire curriculum (Levine, in press). Since most children have had

experience in competitive classrooms before they are exposed to a mastery-based program and they have been exposed to competitive situations outside of school, their tendency to compare their performance to classmates may be the product of socialization. Whether because humans are naturally endowed with a need for social comparative information, or because social comparison and competition are socialized in American children, students' inclination to seek normative information about their performance causes some difficulties for teachers attempting to emphasize mastery.

One might argue that it is not advisable to try to minimize social comparison in the classroom because children will have to function in a competitive environment as adults. My own view is that the benefits of competition in our society are seriously overrated, that cooperation is more likely to further most individuals' aspirations than is competitiveness. Moreover, cooperative, noncompetitive learning environments, in which all children are pushed to higher levels of excellence, in which some children's successes do not necessarily mean other children's failure, and in which all children have an opportunity to succeed by effort, are likely to enhance the achievement of children at all ability levels.

When the teacher does introduce competition into the classroom, an effort should be made to avoid the serious negative achievement-related cognitions that could occur. Covington and Beery (1976) provide an excellent example of a competitive academic game that protects against these possible negative effects. In a spelling bee involving two teams, each child is given the choice of a difficult, medium, or easy word. The number of points the child's team receives depends on the difficulty

level of the word the child chooses. The words in the three difficulty categories are determined by each child's own spelling ability. Consequently, all children have an equal chance of contributing points to their team. Educational researchers have developed many similar strategies for team competition in which teams are comprised of children differing in ability level so that all teams have an equal chance of winning. (Aronson, Stephan, Sikes, Blaney & Snapp, 1978; Devries & Slavin, 1978; Sharan, 1980).

There are other ways of maintaining positive achievement-related cognitions that are compatible with a de-emphasis on normative standards. The structure of classroom instruction, for example, has been found to affect children's beliefs about their competence (see, for example, Blumenfeld, Pintrick, Meece & Wessels, 1982; Bossert, 1979; Rosenholtz & Rosenholtz, 1981; Rosenholtz & Wilson, 1980). Classroom structures that maximize opportunities for performance comparisons have been associated with negative achievement-related cognitions. Whole-class recitations or question-answer periods need to be done cautiously because wrong answers automatically become public and comparable. Giving the same assignments to all children at the same time also facilitates comparisons. Ability grouping, if it is stable and salient, can have negative effects on some children's achievement-related cognitions. In contrast, a highly individualized classroom structure in which children's tasks vary and their interactions with the teacher are either private or in small, changeable groups, minimizes the publicness of performance and evaluative feedback.

Note, however, that while some classroom structures facilitate comparisons more than others, the teacher is probably a more important

factor than the structure of the classroom. Whole-class question and answer periods, for example, can be done in a way that is potentially humiliating for children who give wrong answers. In this situation, children lacking in self-confidence rarely participate because the risk is too high. It is not unusual for a small group of high-ability students to dominate such question-answer instructional periods. However, sensitive teachers who integrate wrong answers into their instruction, thus giving each child a feeling of having made a constructive contribution to the discussion, can engage the participation of all children and avoid feelings of humiliation or embarrassment from wrong answers.

Given that in almost any educational context children will to some degree be aware of how their performance compares to the performance of other children, the teacher has the additional task of minimizing the negative implications of this self-assessment for the relatively poor-achieving child. Within the academic domain of classroom activities, interpreting errors as failure is one avoidable practice that unquestionably contributes to many children's lack of self confidence. It is ironic that errors are considered a natural part of skill learning outside of school. No one would expect to make only perfect serves when learning how to play tennis, nor are bad serves cause for embarrassment or a belief that no amount of practice will ever bring success. Yet in school, children learn to devalue errors, even on assignments based on new material or concepts. Papers with no errors receive gold stars, smiling faces, A's or are displayed on the bulletin board. Indeed, some high-achieving students find anything less than 100% correct cause for severe disappointment.

Errors should be approached as a natural part of learning. Indeed, there is good reason why assignments done without errors should be cause for concern. If no errors are made the task obviously required no learning. Children who continually turn in papers with no mistakes are clearly not being given challenging assignments that push them to the levels of excellence that they are able to achieve. Thus, treating errors as something to be avoided impacts negatively on the relatively poor-achieving student who is continually humiliated by errors and it is harmful to the high-achieving student who becomes more motivated to complete assignments with no errors than to engage in activities that challenge his or her current level of competence. Of course, this principle applies only to performance that reflects the student's true ability level, i.e., his or her best effort. Errors resulting from low effort or sloppiness are not to be regarded favorably. It is often difficult to distinguish errors resulting from low effort versus lack of mastery. Teachers must nevertheless be good diagnosticians to enable them to make this distinctions as well as possible.

Thoughtful teachers have developed many clever methods to avoid the negative effects of incorrect responses. One teacher I interviewed developed the simple but ingenious method of marking incorrect responses on written assignments with a dot. Students continued to work on assignments until all answers were correct. Dots could easily be changed into check marks indicating correctness, without leaving any evidence of the the original error. Thus, when a student had completed a workbook, for example, only checks, indicating total mastery, were evident. By using a symbol for incorrectness that could be easily changed into the symbol for correctness, errors were treated as a natural step in mastering new material.

Emphasis on a narrow band of academic tasks, will almost inevitably cause some children to believe that attempts to try for a valued positive outcome will never be rewarded. Giving children who fare poorly in traditional academic tasks opportunities to publically excel in other activities, however, might sustain a sense of personal efficacy and self worth and the belief that effort does pay off. In most classrooms the teacher creates an environment in which academic excellence, narrowly defined, is clearly more highly valued than other kinds of achievements. Musical, artistic, and athletic talent could be responded to just as enthusiastically, even if given less instructional time It is the teacher's task to find the strengths and talents of each child and to provide opportunities for every child to express those talents.

In summary I have proposed as strategies for maintaining a sense of self worth in children: 1) evaluating on a mastery rather than a normative standard; 2) minimizing salient public evidence of individual children's performance; 3) considering errors as a normal aspect of mastering new skills, and 4) providing opportunities for all children to demonstrate competence in an activity that is publically valued by the teacher. All of these teaching strategies should help maintain positive achievement-related cognitions, including self-efficacy ("I can do it or learn it if I try"), high expectations for success, and if "failure" occurs (which it should naturally) an assumption that continued effort will correct the failure. These cognitions are certainly more likely to result in high effort and continued interest in learning than will feelings of incompetence or a perception that no amount of effort will ever lead to success.

A possible objection to this general goal is that universally high perceptions of competence among children may result in unrealistic expectations and aspirations in the "real world." Maintaining high expectations for success within a particular academic context does not preclude realistic perceptions of an appropriate educational program or realistic occupational aspirations. Any normally intelligent child with adequate teaching can master the elementary school curriculum and when children reach junior high or high school, where there is some choice in subjects and level of difficulty, students can be counseled to take courses appropriate for their aptitude and interests.

To be sure, long-range educational and occupational aspirations present a difficult dilemma because as long as some occupations are more highly valued in society than others, many individuals will perceive highly valued professions as unattainable. Realistic aspirations should be encouraged since not all youths can become doctors, lawyers, or school district superintendents. But all students should believe that they can master the educational curriculum in which they are placed. If they cannot, they are inappropriately placed.

Maintaining Intrinsic Motivation

Many of the tasks required in school seem less intrinsically reinforcing than the tasks children engage in spontaneously in early childhood. Thus it is not realistic to expect to rely solely on an intrinsic motivational system in school. Well-informed teachers can nevertheless capitalize more on children's intrinsic motivational system and minimize the negative long-term effects of extrinsic reinforcement.

There are, for example, more and less attractive ways to present tasks and the creative teacher who designs learning tasks that are also

appealing to children will need extrinsic reinforcers less than the teacher who presents tasks in their dullest, least attractive form.

A less obvious principle of task selection concerns challenge. Piaget emphasized in his writings on cognitive development that children are naturally inclined to practice newly developing skills and they experience the greatest amount of pleasure in accomplishing challenging tasks. Optimal pleasure derived from challenging tasks has been empirically demonstrated by Harter (1974). Thus, once a skill has been fully mastered, it is no longer intrinsically motivating. Consider as an example the toddler who repeatedly (and sometimes irritatingly) engages in some new activity that seems to serve no useful purpose (e.g., tying and untying shoes; opening and closing doors). The skill is eventually mastered and suddenly the activity that seemed so enjoyable is no longer intrinsically motivating.

This same principle applies to learning activities in the classroom. Tasks that are far beyond the child's current skill level or that exercise fully mastered skills are not likely to evoke intrinsic motivation. The latter situation is common in American schools. My own observations of classrooms indicate that high-achieving children's intrinsic motivation systems are rarely activated because the academic program is not sufficiently individualized to provide them with challenging tasks. Relatively high performers succeed in nearly all required academic tasks and one or two errors are often viewed with some disapproval. Since tasks that students can complete with no errors cannot be challenging enough to be intrinsically motivating, the students turn their attention to external reinforcements as an incentive. Thus, the 100% at the top of the paper, public display on the bulletin board, or the teacher's continued high regard become the primary motivators.

The long-term effects of this orientation can be seen in students who are more concerned about the teacher's evaluation of their work than about developing academic competencies and who are humiliated by any grade lower than an A. The high-aptitude student has perhaps the most to lose from an educational environment that provides tasks which usually result in errorless papers and high grades rather than tasks which challenge their competencies. By directing high-achieving students' attention to external rewards, this practice engenders a cautious approach to learning situations. When these individuals are given some choice in academic tasks, they often select the assignment or the course that assures them of a good grade rather than learning. This is unfortunate for the student who could benefit from greater academic challenge. It is undoubtedly an explanation for many highly competent individuals' (especially among females') avoidance of science and math (see Parsons, Adler, Kaczela, 1982; Parsons, Kaczala, & Meece, 1982).

In addition to being challenging, tasks need to be presented with an emphasis on developing competencies rather than on external evaluation. Maehr and his colleagues have found in their research that children are most inclined to pursue academic activities outside of school that are presented to them in a classroom atmosphere which de-emphasizes external evaluation. Children are less interested in continuing activities associated with external evaluation in a classroom context (Maehr, 1976; Maehr & Stallings, 1972; Salili, Maehr, Sorensen, & Fyans, 1976). Maehr argues that the emphasis on external evaluation undermines children's sense of autonomy and control in learning situations, and consequently their intrinsic motivation.

Maehr's analysis may explain why so few junior high school students approach their algebra homework with the same intensity and zeal that they approach such cognitively demanding activities as dungeons and dragons or computer games. Dungeons and dragons and computer games are not necessarily more interesting than algebra. The more important difference between these intellectual activities is the context in which they are encountered. An exhilerating feeling of satisfaction can accompany solving a difficult math problem. But such accomplishments usually occur in a context in which external evaluation is highly salient and anxiety about potential failure detracts from the enjoyment that mastery itself can produce. Algebra may never be done as enthusiastically as dungeons and dragons or computer games, but it could be much less oppressive if external evaluation was less salient.

But what about tasks that are not intrinsically appealing under any circumstances? Many academic tasks will seem useless and irrelevant to children, and consquently they will not provide them with the feeling of competence that is necessary for intrinsic motivation to be activated. Alternative strategies for motivating children to engage in such tasks must be sought.

In some cases, intrinsic motivation can be activated by linking the immediate task to the student's long-range goals or to another activity that is more appealing. For elementary-school-aged children these long-range goals need to be in close view, as delayed reinforcements have minimal effects on young children's behavior. Not until high school are students likely to be motivated to engage in activities that are linked to occupational aspirations. At all ages, the immediate task needs to be instrumentally related to the long-range goal. Teachers

should avoid making reinforcers (e.g., going outside to play) arbitrarily contingent on completing an academic task. Reinforcement used this way is likely to undermine whatever intrinsic interest the child has in the task. Beginning work on an appealing project might be made contingent on mastering a particular skill that is necessary for successfully completing the project. Thus, for example, building a model city to scale might be made contingent on mastering certain mathematical principles. This kind of contingent reinforcement should enhance the value of the immediate skill to be mastered.

There are certainly many situations in which some external reinforcement seems necessary. If external reinforcement is used sparingly, and if certain principles are followed, the long-term negative effects can be minimized. For example, if the information value of a reward is emphasized, the reward is less likely to undermine intrinsic motivation than if the reward itself is emphasized (Deci, Nezlek, & Sheinman, 1981). Thus an A can be given to provide the student with feedback about his or her skill attainment, but it should not be viewed as something that is valuable in itself. The teacher is better advised to say to a child, "You have had A's on your last three arithmetic papers; I guess you have mastered these concepts and are ready to go on to some new concepts," rather than "Congratulations, you received the only A in the class."

Gratuitous, noncontingent rewards are also not advisable. If reinforcement is not made contingent on some performance standard, it provides no information. Indeed, achievement motivation theorists have recently argued that gratuitous praise can actually cause students to lower their self-perceptions of ability. Praise for poor performance is

interpreted by the student as evidence of the teacher's low expectations for his or her performance. Global, positive reactions should also be avoided. Rather, rewards should be contingent on specific, clearly defined, accomplishments. If external reinforcement is used according to these recommendations it should not undermine children's intrinsic motivation to learn for the sake of learning. (See Brophy, 1981, for further recommendations on the effective use of rewards.)

Maintaining Independent Self-Directed Learning

Autonomous learners must trust their own evaluation and ability to diagnose problems when learning new skills. Covington and Beery (1976) suggest many methods for helping children develop skills in self evaluation. Providing models to which children can compare their own work is one such simple technique. Encouraging children to be self critical and to trust their own judgment are other strategies that can be used effectively.

Realistic personal goal setting is also necessary for autonomous learning. The ability to set realistic goals is critical for the college student who typically receives little day-to-day guidance in organizing the work load. Clearly an educational program in which the teacher tells students what to do, when to do it and how long it should take will not enhance students' ability to set realistic goals, although a considerable amount of teacher direction may be required in the first few years of elementary school. Alternative models to this more common situation have been developed (see, for example, Frank, 1980; Homme, 1970; Rainy, 1965; Richter & Tjosvold, 1980; Thomas, 1980; Wang & Stiles, 1976) Some models encourage children, under the gentle guidance of the teacher, to set their own learning goals for a specified amount of time. In a few cases these are formal contractual agreements.

Wang and Stiles (1976), for example, found in an intervention study that assignments were more likely to be completed when students were allowed to determine the order in which assignments were done. High School science students studied by Rainey (1965) showed more care and involvement in laboratory work when they were encouraged to organize their own experiments than when given detailed instructions and directions. Comparisons of classrooms varying in student autonomy have yielded similar results. Deci, Schwartz, Sheinman, & Ryan (1981) observed that elementary-school teachers who encouraged student autonomy, compared to teachers who emphasized direct teacher control, had students with higher levels of task-involvement and a higher sense of competence. Pascarella, Walberg, Junker, & Haertel (1981) report that high school students evidenced more interest in science if they were in classrooms where students had relatively greater control over learning.

DeCharms has implemented educational programs that are specifically aimed at developing personal responsibility for learning (DeCharms, 1968, 1972, 1976). He trains teachers to themselves take more responsibility and feel greater control over their classrooms and to encourage students to do the same. Emphasis is placed on participation, choice, and freedom in the classroom. His program has resulted in students' perceiving greater responsibility over their learning, higher achievement scores and even higher rates of high school graduation among low-income youth.

Thus, many educational models encouraging greater student autonomy and independence have been developed. All of these programs offer an alternative to the more typical classroom in which students are essentially, in the term coined by DeCharm, "pawns" of the teacher, in which

the teacher serves as the sole evaluator and dispenser of rewards and punishments. Researchers have shown that these alternative models of education often result in a higher level of intrinsic motivation, more independent, self-directed learning strategies, and usually a higher level of achievement.

Teacher Variables

There are certainly other factors that affect the level of students' motivation. The teacher's own enthusiasm for teaching, for example, affects students' enthusiasm. To be sure, a teacher who communicates pleasure in his or her work and who presents tasks as interesting and valuable is more likely to maintain student enthusiasm than the teacher who communicates boredom and presents tasks as though they had no intrinsic interest or value.

Teachers' expectations are also well known to influence students' performance (see Brophy & Good, 1974; Good, 1981, for reviews). Students who have teachers who expect them to put forth their best effort and who communicate that expectation are more likely to pay attention and work hard than are students who have a teacher who expects less.

Whether students respect the teacher also affects the amount of effort they exert in the classroom. This may be especially important in the upper grades when youths are highly evaluative and sometimes distrustful of adults. Without the basic respect of the students, a high school teacher may find useless all of the other principles and strategies discussed in this paper for optimizing motivation.

Teachers' respect for the children may be as important as children's respect for the teacher. Whether teachers communicate positive regard to the each child, regardless of the child's academic performance, may

be one of the most important factors in children's willingness to take academic risks. "Noncontingent positive regard" (Rogers, 1951) may be particularly important in the early elementary grades when children are especially concerned about the teacher's acceptance. The teacher's respect for students' ideas is also important. Clearly, the teacher who ridicules students' ideas is unlikely to obtain maximum participation and effort.

These and other teacher variables all have a bearing on the amount of effort children exert on academic tasks. Optimizing motivation therefore requires consideration of teacher characteristics in addition to teaching and evaluative strategies and other classroom context variables.

Conclusion

The recommendations presented may seem reminiscent of the open classroom movement of the 1960's and out of touch with the current back-to-basics thrust. In some respects, the educational model discussed here actually dates back to John Dewey. But, these ideas are not antithetical to an emphasis on basic skills or highly demanding academic subjects. To the contrary, the more demanding the task, the more important are the motivational factors discussed in this paper. Academic subjects like science and math probably suffer the most from traditional instructional techniques. These are the subjects that even highly capable students are reluctant to pursue, in part because they have learned to value high grades over an academic challenge.

Children's disinterest in the most basic of skills--reading--has often been lamented by parents. While motivation for reading has probably been most affected by the availability of television, the association of reading with a highly evaluative, anxiety-provoking school context may

also be a factor. Furthermore, reading is something that children have learned to do in order to avoid punishment or to gain some reward (e.g., a good grade). The intrinsic pleasure in reading may therefore not be apparent. Thus, the typical response to a parent's admonishment, "why don't you read a book instead of watching television all the time," may be something like "I already read the two books I had to make book reports on this year." Perhaps if teachers required television viewing as homework and tested students on the content, they would watch less television and read more books!

Traditional educational programs may foster more fear than joy of learning. If our goal is for students to exert maximum effort on academic tasks in the classroom and also to be prepared to benefit from higher education programs and if we want individuals to value learning and to be motivated to seek learning opportunities throughout their adult lives, radical changes are going to be necessary in educational environments.

But, what about children who have been in our schools for many years, those who have lost their self confidence and are convinced that they will never achieve academic success, or those who engage in academic activities only to obtain external rewards, or those who are unable to work independently? By high school many of the students who lack self confidence have become alienated from the school environment; usually they have begun to invest their energy in alternative domains in which they have some chance for success, such as sports or less socially sanctioned activities as gangs. Students who have become especially concerned with external evaluations do not develop their full academic potential because they avoid the most demanding intellectual subjects

If positive evaluation has been based entirely on a competitive model, success may come to them too easily and, as a consequence, they may not be motivated to aspire and work toward higher levels of excellence. Is high school too late to affect the motivation of these students?

The answer is a definite no. Perhaps the most remarkable thing about youth is their ability to respond to the demands and expectations of a new environment. That is not to say that it is easy to convince a student who has fared poorly in school for many years that he or she can succeed with some effort. Nor is it easy to convince the high achiever that the academic challenge of physics is worth risking the lower grade. But highly skilled teachers and an environment in which self-directed learning is encouraged and external evaluation and competition is de-emphasized can be very effective in reacquainting students with the pleasure of learning.

To be sure, it is preferable to provide from the very beginning a learning environment that is conducive to self confidence, intrinsic motivation and independent, self-directed, learning. It is easier to maintain than to recreate these desirable motivational characteristics with which young children come to school. But a teacher in any grade should be encouraged to create an educational context that supports these motivational characteristics. Students may resist at first, but many are likely to respond with great enthusiasm and to benefit throughout adulthood.

Policy Implications

The recommendations made here are designed to serve as principles, not as prescriptions. They must be adapted and implemented by each teacher according to his or her own special stengths and teaching style.

They must also be adapted to the special characteristics of the students. The children's cultural background, for example, may need to be considered in determining the degree to which cooperation versus competition is emphasized or in selecting a whole-class, small-group, or individualized instructional format. Each teacher must experiment with and evaluate methods within the context of his or her own classroom.

Many of the recommendations made here for enhancing achievement motivation are not implemented easily. They require considerable skill and dedication on the part of the teacher. Ongoing in-service training is therefore crucial. In-service programs can be useful because they provide an opportunity for teachers to share ideas and strategies with each other and to become acquainted with recent developments in educational research. Educational researchers in achievement motivation have done considerable experimental work to test the basic assumptions presented here and they have implemented and evaluated educational programs that apply these motivational principles to real classrooms. Teachers would certainly benefit from a familiarity with this work.

To facilitate the application of research findings to the classroom, educational researchers must be encouraged to communicate their research findings in ways that are understandable and useful to teachers. This could be accomplished, in part, by stipulating such communication in grants from federal agencies.

Administrative support at the school level is essential. Teachers' classroom requirements generally do not allow time for the continued training that is critical to their effectiveness in the classroom. Some reduction in classroom time would be necessary to enable most teachers to benefit from an in-service training program. Reduced class sizes

for the first and second grades would also be advisable. Individualization is difficult in these grades because children lack the maturity and school experience that is necessary for self-directed learning. Yet experiences in the first few grades in school often set a child on a course that is difficult to reverse thereafter and smaller class sizes would facilitate the application of the motivational principles discussed above to set them on the right course.

Most of these policy recommendations have a price tag on them, but the potential gain in student achievement seems to me to outweigh the modest cost. My own view is that attracting talented indiviudals to the teaching profession will ultimately have the greatest impact on students' motivation and excellence in education. But this is a policy issue beyond the scope of this paper. Considerable progress could be made now toward optimizing students' motivation to learn by providing teachers with knowledge and administrative encouragement which will allow them to transcend the traditional model of education that most teachers experienced as students and that still predominates in American classrooms.

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